

REMARKS

The Examiner is thanked for the thorough examination of the application.

Status Of The Claims

Claims 1-3, 5-10, 23, 24, 26 and 28-30 are pending in the application. By this Amendment, claims 1, 7 and 23 are amended. No new matter is involved.

Reconsideration of the Application, as amended, is respectfully requested.

Personal Interview

Applicant acknowledges with appreciation the courtesies extended by Examiner Nguyen to Robert J. Webster, Reg. No. 46,472, Applicant's representative, during the personal interview conducted on January 22, 2008. During that interview, agreement was reached concerning claim language that patentably defines over the applied art. Claims 1, 7 and 23 have been amended to include that language.

Entry of Amendments

Applicant respectfully requests that this Amendment be entered at this stage of the proceeding because, as noted above, it clearly places the Application in condition for allowance relative to the applied art. Moreover, because this Application has had such a thorough search and examination, including two Requests for Continued Examination (RCEs), any further consideration and/or search will be *de minimis* and present no significant burden on the Examiner. Accordingly, it is proper to enter this amendment.

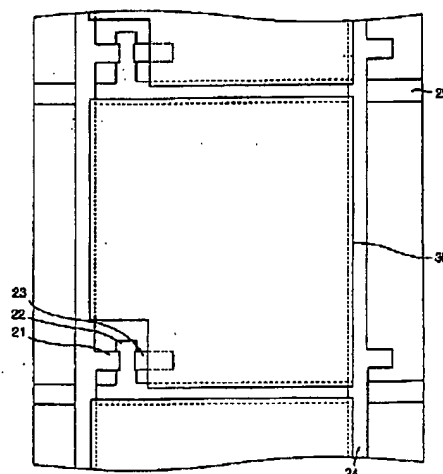
Claims 1-3, 5, 6, 23, 24, 26, 28 and 30 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Kobo (U.S. Patent 6,295,109) in view of Kim (U.S. Patent Application Publication 2001/0046000) and Faris (U.S. Patent 6,133,980).

Applicant traverses all of the aforesaid rejections and respectfully requests reconsideration and withdrawal thereof.

The present invention pertains to a transmission-reflective type liquid crystal display device that, as is typically set forth in the independent claims, includes a reflecting film functioning as a pixel electrode that substantially overlaps data and gate lines of the pixel. The advantages of the present invention over the conventional art can be better understood by comparing Figure 4 of the present invention to the conventional art depicted in Figure 5, below.

FIG.5

CONVENTIONAL ART



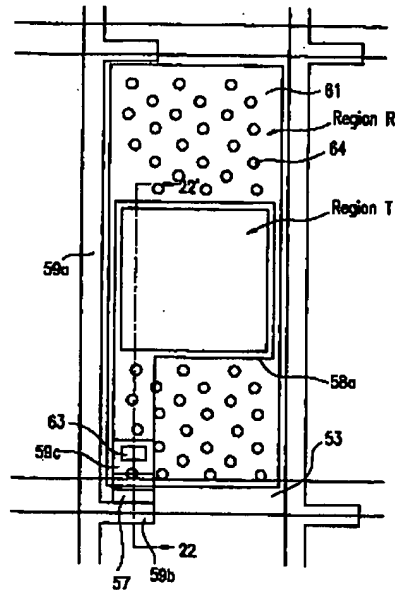
As explained at page 9, lines 20-24 of the specification, the reflecting film **36** overlaps with every *inner edge* of the gate line **25** and the data line in order to form storage capacitance in the conventional art of Figure 5. However, as is explained at page 10, lines 3-11 of the specification, the reflecting film **3** of the present invention overlaps the greater part of the gate line **25** and the data line **24** to form storage capacitance.

Kobo pertains to an LCD having pixels with reflective and transmissive regions. The Examiner points to Figures 2, 3, 21 and 22 of Kobo, which show polarizers **6**, **9**, quarter wave plates **7**, **10**, substrates **1**, **2**, transmissive electrode **4**, reflective/transmissive electrode regions **3**, **8** and a liquid crystal layer **5**.

At page 7, lines 1-9 of the Office Action (and at page 13, lines 1-7), the Examiner unequivocally admits to some of the failures of Kobo, including 1) the failure to disclose a light transmitting region between an inner edge of a gate line and a side of the outer edge periphery of the reflecting film in each pixel, such that the opposite side entirely overlaps an adjacent gate line; and 2) the failure to disclose a circular polarizer made of cholesteric liquid crystal polarizer including a right handed pitch, pitch values p of λ/n and a wavelength of 380 nm to 800 nm.

However, Kobo additionally fails to disclose or suggest a reflection film acting as a pixel electrode that overlaps the greater part of both the gate line and the data line in the pixel, such as is set forth in independent claims 1, 7 and 23 of the present invention. This failure of Kobo can be readily observed in Figure 21 of the patent, which is depicted below.

FIG. 21



Applicant respectfully submits that the terminology, “the greater part,” means more than half, and it is clear from an inspection of Kobo, that its pixel electrode covers less than half of the adjacent gate lines and less than half of the adjacent data lines.

In an attempt to remedy the deficiencies of Kobo, the Office Action turns to Kim, in which the transmissive pixel electrode 104 covers less than the greater part, i.e., less than half, of an adjacent gate line, and less than the greater part, i.e., less than half, of adjacent data line.

So, even if one of ordinary skill in the art were properly motivated to modify Kobo in view of Kim, the resulting modified version of Kudo would not result in, or otherwise render obvious, the claimed invention.

The Examiner also turns to the teachings of Faris for teachings pertaining to pitch values p of λ/n and for wavelength $\lambda = 400 \text{ nm} - 800 \text{ nm}$.

Applicant respectfully submits that the Office Action fails to establish why one of

ordinary skill in the art would have a proper incentive to turn to Kim to modify Kobo, as suggested in this rejection. for a number of reasons.

Firstly, Kim does not even disclose a reflective pixel electrode. All that Kim discloses is a transmissive pixel electrode. Because of this, all of Kim's pixel electrode is a light transmitting region. In other words, Kim maximizes its aperture ratio by overlapping parts of its non-transmissive gate line with the transmissive pixel electrode and part of its non-transmissive data line with its transmissive pixel electrode. The Office Action fails to establish what this maximization of the aperture ratio of a light transmissive pixel electrode has to do with maximizing the aperture ratio of Kobo's light reflective pixel electrode. Instead of doing this, the Office Action merely concludes that it would be obvious to modify Kobo's light reflective pixel electrode to maximize Kobo's aperture ratio to maximize picture quality, without explaining how this will be accomplished with Kobo's light reflective pixel electrode, which affects aperture ratio differently than does Kim's completely transparent pixel electrode and pixel region.

Secondly, Kim's light transmissive pixel electrode 104 does not cover the greater part of its adjacent gate lines (117) and data lines (115). Inspection of Fig. 6 of Kim, for example, clearly shows that less than half of the thickness of each gate line 117 and less than half the thickness of each data line 115 is covered by Kim's transmissive pixel electrode 104.

In this regard, Applicants point out that, while patent drawings are normally not drawn to scale, they may nevertheless be used to establish relationships or proportions between the various components which are clearly depicted therein. In re Schreiber, 128 F.3d 1473, 1477-79, 44 USPQ2d at 1431-32, Vas-Cath Inc. v. Mahurkar, 935 F.2d 1555, 1565, 19 USPQ2d 1111, 1118

(Fed. Cir. 1991), In re Mraz, 455 F.2d 1069, 1972, 173 USPQ 25, 27 (CCPA 1972) and In re Heinle, 342 F.2d 1001, 1007, 145 USPQ 131, 136 (CCPA 1965).

So, even if one were to modify Kobo's reflective pixel electrode in view of Kim's transparent pixel electrode 104 (which is not the case for reasons presented above), the modified version of Kobo would not disclose or suggest the claimed invention, which recites a combination of features including a reflecting film on an inner side of the first transparent substrate adjacent to the liquid crystal layer, the reflecting film functioning as a pixel electrode and defining a light-transmitting region, wherein said light transmitting region is disposed between an inner edge of a gate line and a side of an outer edge periphery of said reflecting film in each pixel, a first opposing side of said reflecting film overlapping the greater part of an adjacent gate line, and a second opposing side of said reflecting film overlapping the greater part of an adjacent data line.

The final Office Action also asserts that the language "the greater part of" is not clarified, and is a relative term. Applicant respectfully disagrees with this assertion, and submit that "the greater part of" means "more than half of." The term "greater part of" logically assumes that there is also a complimentary "lesser part of" the element being modified.

The Office Action also applied Faris for teachings related to the claimed pitch values and wavelengths. Applicant respectfully submits that even of one of ordinary skill in the art were properly motivated to use the claimed pitch values and wavelengths based on Faris, the so modified version of Kobo-Kim would still not render the claimed invention obvious, because of the aforementioned shortcomings of Kobo and Kim.

Furthermore, as noted above, independent claims 1, 7 and 23 have been amended to

include language, agreed to by the Examiner, that clearly defines over the applied art.

Accordingly, the Office Action fails to make out a *prima facie* case of the invention recited in the pending claims.

Reconsideration and withdrawal of these rejections of claims 1-3, 5-10, 23, 24, 26 and 28-30 are respectfully requested.

Conclusion

All of the stated grounds of rejection have been properly traversed, accommodated, or rendered moot. Applicant therefore respectfully requests that the Examiner reconsider all presently outstanding rejections and that they be withdrawn. It is believed that a full and complete response has been made to the outstanding Office Action, and as such, the present application is in condition for allowance.

If the Examiner believes, for any reason, that personal communication will expedite prosecution of this application, the Examiner is invited to telephone the undersigned (703) 205-8000, in the Washington, D.C. area.

Prompt and favorable consideration of this Amendment is respectfully requested.

If necessary, the Commissioner is hereby authorized in this, concurrent, and future replies, to charge payment or credit any overpayment to Deposit Account No. 02-2448 for any additional fees required under 37 C.F.R. §§ 1.16 or 1.17; particularly, extension of time fees.

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Respectfully submitted,

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